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May 8, 1984
EF2-68188

Director of Nuclear Reactor Regulation
Attention: Mr. B. J. Youngblood, Chief
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Youngblood:

Reference: (1) Fermi 2
NRC Docket No. 50-341

(2) NUREG-0798, Safety Evaluation Report Related to Enrico Fermi Atomic Power Plant, Unit No. 2, Supplement No. 3, January 1983

(3) Letter, Detroit Edison to NRC, "Response to Items Requiring Resolution or Evaluation of Emergency Plan Supplement No. 3, NUREG-0798, January 1983", EF2-67132, February 23, 1984

Subject: Results of the Short-Term Meteorological Study Conducted to Determine the Effect of Lake Erie on Plume Transport Characteristics at the Fermi 2 Site

Enclosed are forty copies of the subject report in response to Item 3 of Section 13.3.2.8, of the Fermi 2 SER Supplement No. 3 (Reference 2), as committed in Reference (3).

Detroit Edison performed a short-term meteorological study from May to October 1983 and statistically analyzed the results as described in the attachment. The enclosed report is based on Detroit Edison Engineering Research Report 83C52-2, dated March 21, 1984. The objective of the study was to determine the influence of Lake Erie on plume transport at the Fermi 2 site and, if significant, appropriately modify the offsite dose assessment models used during emergency situations.

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When the study was initiated in 1983, it was believed that through measurement of the appropriate parameters data could be entered in "coastal site" equations presented in the literature and an appropriate model could be selected for the Fermi 2 site. With actual Thermal Internal Boundary Layer (TIBL) heights being measured by acoustic radar, the capability to statistically compare measured and predicted values was available. A review of the results presented in the enclosed report clearly indicates that well known methods of predictive modeling do not satisfactorily correlate with measured values when using the Fermi 2 site specific 1983 data base. Analytical work on the 1983 data base is continuing to identify a TIBL equation best suited for Fermi 2. Two approaches are under investigation:

- Improvements to the predictive capability of the equations used in the study
- Development of a site specific relationship

The results of this investigation will be used to determine the significance of TIBL formation on the dispersion of radioactive releases from Fermi 2. If this effect is significant on dispersion, the appropriate modifications will be made to the offsite dose assessment model. It is anticipated this program can be accomplished such that any modifications can be incorporated during the Summer of 1985.

The present offsite dose assessment model is based on straightline Gaussian plume transport and incorporates the algorithms found in Reference 17 to Regulatory Guide 1.111, Revision 1, July 1977 and assumes a building wake factor. The calculations are made using real-time 15-minute averages from the Fermi 2 60 meter tower. This model is considered adequate until the significance of the effect of Lake Erie is determined because the terrain around the Fermi 2 site in the 10 mile EPZ is flat and has little or no effect on dispersion characteristics.

Should you have any questions, please contact Mr. O. Keener Earle, (313) 586-4211.

Sincerely,

Wayne H. Jens

cc: Mr. P. M. Byron
Mr. F. Kantor
Mr. J. G. Keppler (3)
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